CURRENT STATUS OF THE CLAIMS

In the Claims

The following is a marked-up version of the claims with the language that is underlined ("___") being added and the language that contains strikethrough ("—") being deleted:

1. (Currently Amended) A monolithic waveguide comprising:

a planar waveguide core disposed in a fixed position and flush with a lower cladding;

an air-gap cladding engaging a portion of the waveguide core; and

an overcoat layer engaging a portion of the air-gap cladding and engaging the lower cladding.

2. (Previously Presented) The waveguide of claim 1, wherein the waveguide core includes at least one coupling element, wherein the air-gap cladding engages a portion of the at least one coupling element.

3. (Original) The waveguide of claim 1, further comprising:

at least one coupling element disposed adjacent to the waveguide core.

4. (Currently Amended) The waveguide of claim 1, further comprising:

a second waveguide cladding adjacent to the waveguide core, wherein the air-gap cladding engages a portion of the second waveguide cladding.

5. (Currently Amended) The waveguide of claim 1, further comprising:

a second waveguide core, wherein the air-gap cladding engages a portion of the second waveguide core.

6. (Currently Amended) A device, comprising:

a monolithic waveguide having a planar waveguide core disposed in a fixed position and flush with a lower cladding, an air-gap cladding engaging a portion of waveguide core, and an overcoat layer engaging a portion of the air-gap cladding, wherein the overcoat layer engages the lower cladding.

7. (Original) The device of claim 6, wherein the waveguide is included in a microelectronic device.

8. (Original) The device of claim 6, wherein the waveguide is included in an integrated optical device.

9. (Original) The device of claim 6, wherein the waveguide is included in a photonic crystal device.

10-13. (Canceled)

14. (Previously Presented) The waveguide of claim 1, wherein the overcoat layer is selected from silicon dioxide, silicon nitride, polyimides, polynorbornenes, epoxides, polyarylenes ethers, and parylenes.

15. (Previously Presented) The waveguide of claim 1, wherein the overcoat layer is selected from polyimides, polynorbornenes, epoxides, polyarylenes ethers, and parylenes.

16. (Previously Presented) The waveguide of claim 1, wherein the overcoat layer is selected from polyimides and polynorbornenes.

17. (Previously Presented) The device of claim 6, wherein the overcoat layer is selected from silicon dioxide, silicon nitride, polyimides, polynorbornenes, epoxides, polyarylenes ethers, and parylenes.

18. (Previously Presented) The device of claim 6, wherein the overcoat layer is selected from polyimides, polynorbornenes, epoxides, polyarylenes ethers, and parylenes.

19. (Previously Presented) The device of claim 6, wherein the overcoat layer is selected from polyimides and polynorbornenes.

20. (Withdrawn) A waveguide, comprising:

a waveguide core, a sacrificial layer around a portion of one of the waveguide cores, and an overcoat layer engaging a portion of the sacrificial layer.

21. (Withdrawn) The waveguide of claim 20, wherein the overcoat layer is selected from silicon dioxide, silicon nitride, polyimides, polynorbornenes, epoxides, polyarylenes ethers, and parylenes.

22. (Withdrawn) The waveguide of claim 20, wherein the sacrificial layer is selected from polyimides, polynorbornenes, epoxides, polyarylenes ethers, and parylenes.

23. (Withdrawn) The waveguide of claim 20, wherein the sacrificial layer is selected from polypropylene carbonate, polyethylene carbonate, polynorborene carbonate.

24. (Withdrawn) The waveguide of claim 20, further comprising:

a coupling element adjacent to the waveguide core and engaging the sacrificial layer.

25. (Withdrawn) The waveguide of claim 20, wherein the waveguide core includes at least one coupling element.

26. (Withdrawn) The waveguide of claim 25, wherein the at least one coupling element is a volume grating coupling element.

27. (Withdrawn) The waveguide of claim 20, wherein the sacrificial layer is disposed around a portion of one of the at least one coupling element.